A5626-14 1/90

facts

1988 YEARBOOK

A SUMMARY OF

FERROUS,

NONFERROUS

METALS,

PAPER AND

TEXTILE

STATISTICS

TABLE OF CONTENTS

Title	Page
Summary: Ferrous, Nonferrous Base Metals	1
Aluminum: 10 Year Review	2
Used Beverage Can (UBC) Consumption	2
U.S. Consumption of Purchased Old & New Aluminum Scrap	3
U.S. Scrap Exports of Aluminum by Country	3
Average Monthly U.S. Transaction Aluminum Price	4
Average Monthly London Metal Exchange Aluminum Cash Price	4
Average Monthly Scrap Aluminum Clipping Prices	4
Copper: 10 Year Review	5
Consumption of Purchased Copper Scrap in the U.S.	6
U.S. Exports of Copper Scrap by Country	6
Average Monthly U.S. Copper Price	7
Average Monthly London Metal Exchange Copper Price	7
Scrap Iron & Steel: 10 Year Review	8
Trend of U.S. Steel Production by Furnace	8
U.S. Exports of Ferrous Scrap by Country	9
U.S. Exports of Ferrous Scrap by Grade	9
U.S. Imports of Ferrous Scrap, Iron Ore, Pig Iron and Steel Products	10
Purchased Scrap Receipts, Home Scrap Production and Ferrous Scrap Consumption by Grade	10
Average Monthly No. 1 Heavy Melting Steel Scrap Composite Price	11
Average Monthly No. 2 Bundles Composite Price	11
Average Monthly Finished Steel Composite Price	11
Lead: 10 Year Review	12
Average Monthly U.S. Lead Producer Price	12
Average Monthly London Metal Exchange Lead Price	13
U.S. Lead Scrap Exports by Country	13
Nickel/Stainless Steel: 10 Year Review	14
Average Monthly New York Dealer Nickel Cathode Price	14
Average Monthly London Metal Exchange Nickel Price	14
U.S. Exports of Stainless Steel Scrap by Country	15
Zinc: 10 Year Review	16
Zinc Scrap Exports by Country	16
Average Monthly U.S. Zinc Price	17
Average Monthly London Metal Exchange Zinc Cash Price	17
U.S. Refinery Production of Gold: 10 Year Review	18
Average Monthly Comex Gold Price	18
Average Monthly London Metal Exchange Gold Price	18
U.S. Refinery Production of Silver: 10 Year Review	19
Average Monthly Comex Silver Price	19
Average Monthly London Metal Exchange Silver Settlement Price	19
Platinum-Group Metals (PGMs) Nontoll Refined: 10 Year Review	20
Platinum-Group Metals (PGMs) Toll Refined: 10 Year Review	20
Average Monthly New York Dealer Platinum Price	21
Average Monthly New York Dealer Palladium Price	21
Paper and Paper Stock: 10 Year Review	22
Paper Stock Consumption by Grade	22
U.S. Exports of Paper Stock by Grade	23
Paper Stock Exports by Country	23
Textile Exports by Country: 1987	24
Textile Exports by Country: 1988	24

This booklet is printed on 70% recycled paper fibers.

SUMMARY

Ferrous, Nonferrous Base Metals (short tons)

Aluminum

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1978	1,616,514	147,777	23%
1979	1,705,031	243,921	24%
1980	1,693,633	376,288	28%
1981	2,012,423	184,435	32%
1982	1,978,888	170,611	33%
1983	2,107,630	241,926	31%
1984	2,092,891	241,200	29%
1985	2,070,719	356,478	31%
1986	2,075,140	330,914	31%
1987r	2,310,499	338,940	32%
1988	2,463,433	434,730	32%

Copper

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1978	1,335,055	123,045	40%
1979	1,668,838	168,576	46%
1980	1,545,555	210,518	46%
1981	1,521,534	161,167	49%
1982	1,268,727	160,951	48%
1983	1,155,098	150,724	40%
1984	1,191,350	207,520	40%
1985	1,222,652	308,827	40%
1986	1,208,517	316,741	40%
1987r	1,296,750	324,372	41%
1988	1,404,299	352,431	43%

Iron and Steel (000 s.t.)

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1978	46,068	7,835	30%
1979	46,963	9,595	30%
1980	40,954	9,693	33%
1981	41,981	5,575	31%
1982	27,994	6,563	33%
1983	34,219	7,369	36%
1984	36,060	9,235	35%
1985	38,818	9,612	39%
1986	38,004	11,380	42%
1987r	44,808	10,039	46%
1988	49,613	9,491	45%

Lead

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1978	716,000	108,724	46%
1979	742,000	131,999	49%
1980	640,000	131,893	55%
1981	637,000	65,498	51%
1982	574,000	57,047	47%
1983	498,000	56,127	40%
1984	646,000	49,710	51%
1985	628,000	66,082	50%
1986	634,000	68,340	50%
1987r	767,000	57,785	56%
1988p	753,000	90,064	55%

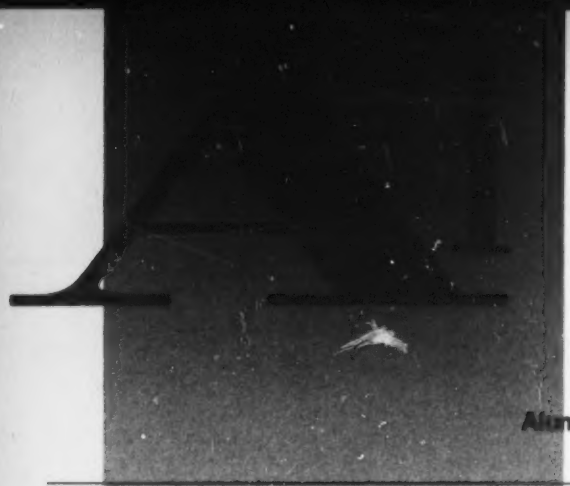
Stainless Steel

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1978	374,000	102,630	31%
1979	406,000	100,011	30%
1980	363,000	105,795	32%
1981	431,000	56,678	37%
1982	406,000	131,338	45%
1983	480,000	80,299	42%
1984	549,000	163,542	44%
1985	557,000	179,583	45%
1986	543,000	164,120	46%
1987r	644,000	168,601	45%
1988p	790,000	243,344	50%

Zinc

Year	Apparent Scrap Consumption*	Scrap Exports	Scrap Market Share
1978	199,712	16,519	17%
1979	224,546	31,029	20%
1980	201,764	32,565	23%
1981	223,858	29,571	24%
1982	188,272	18,595	24%
1983	226,044	23,085	25%
1984	264,203	31,890	28%
1985	240,803	42,544	23%
1986	165,507	69,659	15%
1987r	249,081	90,815	21%
1988p	173,843	104,825	14%

*Apparent scrap consumption is a descriptive term. For purposes of analyses, refer to the individual metals for a complete definition.
r = Revised
p = Preliminary



aluminum: A light, silvery-white, ductile metal with high electrical conductivity and good resistance to corrosion. Symbol Al; melting point, 660.2° C. Aluminum is the basis for many light alloys.

Aluminum: 10 Year Review (short tons)

Year	Primary Production	Purchased Old & New Scrap	Imports metal and scrap	Exports	Stocks (includes scrap)	Stock Changes	Apparent Aluminum Consumption[1]	Scrap Market Share[2]
1978	4,804,000	1,616,514	1,079,753	519,881	2,746,978	−106,200	7,086,586	22.8%
1979	5,023,000	1,705,031	839,966	773,385	2,555,920	−191,058	6,985,670	24.4%
1980	5,130,000	1,693,633	713,040	1,483,211	2,538,002	− 17,918	6,071,380	27.8%
1981	4,948,000	2,012,423	935,162	867,174	3,303,325	+765,323	6,263,088	32.1%
1982	3,609,000	1,978,088	968,056	824,469	3,099,740	−203,585	5,935,060	33.3%
1983	3,696,000	2,107,630	1,202,814	855,081	2,504,616	−595,124	6,746,487	31.2%
1984	4,518,000	2,092,891	1,628,310	808,882	2,650,000	+145,384	7,284,935	28.8%
1985	3,857,000	2,070,719	1,565,204	1,000,752	2,350,000	−300,000	6,792,171	30.5%
1986	3,348,000	2,075,140	2,167,857	830,022	2,240,000	−110,000	6,733,055	30.9%
1987′	3,685,000	2,310,499	2,038,519	1,010,765	2,087,757	−147,243	7,170,496	32.0%
1988	4,350,000	2,463,433	1,785,946	1,374,940	2,098,779	+ 11,022	6,930,098	31.5%

Source: U.S. Bureau of Mines, Bureau of the Census.

[1] Apparent Aluminum Consumption: Defined as refined production + old and new scrap consumed + net trade + stock change.

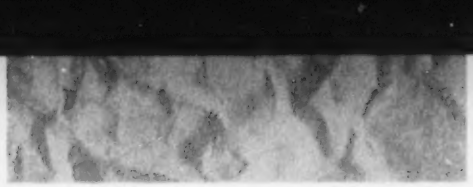
[2] Scrap Market Share: Calculated from purchased scrap (column 3) divided by apparent aluminum consumption (column 8).

Used Beverage Can (UBC) Consumption (000 pounds)

	1982	1983	1984	1985	1986	1987	1988
Producers	1,010,000	1,053,000	1,167,700	1,193,775	1,163,931	1,243,000	1,426,000[1]
Secondary smelters, Other consumers	28,000	24,000	25,000	24,225	14,784	30,700	
Exporters	4,000	3,000	3,800	13,814	13,480	60,500	78,600
Total	1,042,000	1,080,000	1,196,500	1,231,814	1,192,195	1,335,000	1,505,000
Recycling rate	46.5%	50.0%	51.3%	50.5%	47.1%	50.5%	54.6%
Cans per pound	23.0	23.0	25.9	26.6	27.0	27.4	28.3
Cans shipped (Billions of Cans)	51.7	56.7	60,452	64,908	68,343	72,458	77,886

Sources: NARI, ISRI

[1] *Producers, secondary smelters, other consumers combined.*



U.S. Consumption of Purchased Old & New Aluminum Scrap (short tons)

All Scrap Consumed: New Scrap	1981 Consumption	1982 Consumption	1983 Consumption	1984 Consumption	1985 Consumption	1986 Consumption	1987 Consumption	1988 Consumption
Solids	793,707	702,300	759,026	744,754	713,802	771,379	737,261	774,476
Borings and turnings	177,806	165,617	184,675	185,117	165,002	179,540	162,062	144,585
Dross and skimmings	113,563	118,008	121,649	107,231	95,132	66,811	45,553	35,012
Other	54,535	53,203	55,531	67,107	91,677	102,695	139,993	253,415
Total new scrap	1,139,611	1,039,128	1,120,881	1,104,209	1,065,613	1,130,425	1,084,859	1,207,489
Old Scrap								
Castings, sheet, clippings	227,866	221,808	265,807	254,659	221,292	244,213	249,485	424,011
Aluminum-copper radiators	18,563	21,627	24,398	22,604	18,678	18,303	13,879	15,624
Aluminum cans	508,305	563,726	574,182	598,306	628,851	552,258	583,756	706,873
Other	32,203	45,000	32,347	33,125	25,023	36,347	29,008	36,169
Total old scrap	786,937	352,161	896,734	908,694	893,844	851,121	876,128	1,182,676
Sweated pig	85,875	87,599	90,015	79,988	111,262	93,594	81,129	73,268
Total all scrap	2,012,423	1,978,888	2,107,630	2,092,891	2,070,719	2,075,140	2,042,116	2,463,433

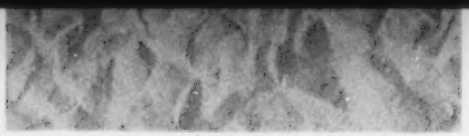
Source: U.S. Bureau of Mines

U.S. Scrap Exports of Aluminum by Country (short tons)

Country	1983	1984	1985	1986	1987	1988
Belgium	609	1,543	3,006	3,561	1,333	3,973
Brazil	42	233	837	3,819	2,080	823
Canada	23,089	19,116	13,426	12,867	20,785	28,316
France	217	298	287	350	2,455	14,071
Germany, Federal Republic of	2,190	5,197	4,419	4,281	1,878	4,058
India	246	24	—	77	—	570
Italy	664	2,860	5,226	7,569	3,392	9,330
Japan	194,339	154,560	246,692	222,978	234,261	248,355
Korea, Republic of	924	970	595	1,862	5,411	18,677
Mexico	12,598	33,349	48,958	27,538	22,734	30,803
Netherlands	164	4,126	5,788	5,413	5,073	9,380
Republic of SAF	3,072	18	—	—	—	68
Spain	444	696	1,550	1,169	708	364
Taiwan	2,103	16,962	23,394	37,561	35,169	58,522
United Kingdom	80	227	1,692	455	940	1,412
Other	1,144	965	584	1,491	2,643	6,008
Total[1]	241,926	241,200	356,478	330,914	338,940	434,730

Source: Department of Commerce

[1] Data may not add to totals shown because of independent rounding.



Aluminum U.S. Transaction Price (cents per pound)

Month	1986	1987	1988
January	55.6	55.1	90.8
February	56.8	60.6	97.9
March	61.7	63.6	109.2
April	60.6	65.6	109.6
May	58.7	70.2	118.8
June	58.3	73.1	129.4
July	54.6	75.5	124.7
August	54.9	81.6	126.3
September	56.8	82.4	113.7
October	54.1	85.1	106.4
November	52.8	81.1	108.9
December	53.1	84.6	111.2
Average	56.5	73.3	112.2

Source: Metals Week

Aluminum LME Cash (cents per pound)

Month	1986	1987	1988
January	50.8	53.1	90.8
February	50.6	58.2	97.0
March	53.0	62.0	114.6
April	52.8	63.5	113.8
May	52.8	64.0	135.5
June	63.2	66.8	162.3
July	50.9	75.0	117.1
August	51.2	82.1	122.5
September	54.7	79.2	108.3
October	52.7	89.0	104.7
November	51.3	76.2	108.0
December	51.4	82.7	115.8
Average	52.2	70.8	115.4

Source: Metals Week

Scrap Aluminum Clipping[1] Price (cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1978	23.71	25.50	25.41	38.20	28.50	28.50	28.50	28.50	28.50	28.50	28.60	30.00	27.70
1979	31.50	32.97	36.05	40.69	45.55	44.79	43.69	42.40	41.55	43.59	44.90	45.50	41.14
1980	48.64	51.18	56.35	51.00	46.88	43.17	45.05	48.02	48.50	48.50	47.32	44.50	48.26
1981	44.50	42.92	42.50	42.41	40.20	38.50	38.50	38.50	37.69	35.77	33.18	31.00	38.81
1982	30.50	30.50	29.48	28.00	27.80	24.98	24.50	24.50	24.50	24.50	23.10	22.50	26.24
1983	23.12	25.50	27.50	27.50	31.02	33.50	35.00	39.24	41.50	41.50	40.85	40.50	33.89
1984	41.83	42.50	45.23	47.45	43.50	41.21	38.64	36.11	33.39	29.76	27.50	29.44	38.05
1985	31.25	30.00	30.00	30.00	28.82	26.50	26.31	24.50	24.50	24.50	24.50	24.50	27.12
1986	25.59	27.56	29.69	30.86	29.50	28.93	28.50	28.50	28.50	28.50	28.50	28.50	28.59
1987	28.50	28.50	31.23	34.50	36.10	37.50	39.14	43.07	43.50	47.32	47.50	47.50	38.70
1988	66.65	64.35	73.89	74.74	76.21	79.73	79.65	80.50	79.98	73.98	73.66	74.69	74.34

Source: American Metal Market

[1] Clipping: Defined as segregated low copper-containing industrial scrap.

copper: A reddish metallic element. Symbol Cu; melting point, 1,083° C; malleable; ductile; high electrical and thermal conductivity. Copper is the basis for brass, bronze, aluminum bronze and many other alloys.

Copper: 10 Year Review
(short tons)

Year	Refined Production	Purchased Old & New Scrap Recoverable	Import (refined only)	Export (refined only)	Refined Stocks (at year end)	Stock Change	Apparent Copper Consumption[1]	Scrap Market Share[2]
1978	1,597,296	1,335,055	457,120	101,327	168,652	− 65,348	3,353,492	39.8%
1979	1,671,809	1,668,838	237,172	81,214	70,547	− 98,105	3,594,710	46.4%
1980	1,339,502	1,545,555	470,625	15,971	54,013	− 16,534	3,356,245	46.0%
1981	1,701,970	1,521,534	364,448	26,893	534,615	+480,602	3,080,457	49.3%
1982	1,352,277	1,268,727	284,877	33,684	767,201	+232,586	2,639,611	48.0%
1983	1,303,018	1,155,098	506,582	89,724	762,792	− 4,409	2,879,383	40.1%
1984	1,283,739	1,191,350	490,192	100,766	621,697	−141,095	3,005,610	39.6%
1985	1,165,313	1,222,652	416,366	41,818	342,815	−278,882	3,041,395	40.3%
1986	1,182,999	1,208,517	553,334	13,726	248,017	− 94,798	3,025,922	40.0%
1987[r]	1,241,970	1,285,750	517,154	10,135	123,458	−124,559	3,159,298	40.7%
1988	1,549,856	1,404,299	365,601	64,292	109,128	− 14,330	3,269,794	42.9%

Source: U.S. Bureau of Mines
[1] Apparent Copper Consumption: Defined as refined production + old & new scrap recoverable + net refined trade + refined stock change.
[2] Scrap Market Share: Calculated from old & new scrap recoverable (column 3) divided by apparent copper consumption (column 8).
[r] = Revised

Consumption of Purchased Copper Scrap in the U.S. (short tons—gross weight)

Year	New Scrap	Old Scrap	Total Scrap Consumption
1978	1,078,810	732,246	1,811,056
1979	1,370,039	915,278	2,285,317
1980	1,168,245	877,007	2,040,252
1981	1,155,853	856,469	2,012,322
1982	942,768	727,048	1,669,816
1983	889,821	633,135	1,522,955
1984	949,241	630,858	1,580,099
1985	926,876	629,328	1,556,204
1986	972,353	675,595	1,647,948
1987r	996,652	742,925	1,739,577
1988	1,079,111	711,658	1,790,769

Source: U.S. Bureau of Mines
r = Revised

U.S. Exports of Copper Scrap by Country (short tons)

Country	1983	1984	1985	1986	1987	1988
Belgium-Luxembourg	7,905	5,632	17,342	9,736	10,103	12,707
Canada	33,858	46,040	44,698	37,779	35,344	58,181
France	320	280	409	312	106	823
Germany, Federal Republic of	3,665	7,266	37,468	14,710	13,267	33,881
Hong Kong	470	704	2,874	7,141	4,237	1,806
India	6,852	10,399	16,338	19,044	13,437	16,755
Italy	3	3,535	17,358	35,194	13,966	3,067
Japan	21,625	47,779	42,155	42,154	43,553	36,768
Korea, Republic of	25,771	22,950	28,976	29,472	39,594	70,090
Mexico	15,388	17,571	17,746	6,667	19,844	23,799
Netherlands	11,642	1,747	8,709	3,531	1,292	2,248
Spain	888	3,450	12,930	14,785	15,765	14,857
Sweden	5,959	3,046	2,227	2,622	1,739	1,796
Switzerland	494	551	1,198	418	181	75
Taiwan	14,631	33,455	43,880	75,848	91,969	61,606
United Kingdom	969	1,169	6,597	6,125	3,884	5,521
Other	284	1,946	7,919	11,202	16,091	8,451
Total	150,724	207,520	308,825	316,741	324,372	352,431

Source: Department of Commerce

Average Copper Price in the U.S.—Comex 1st Position (cents per pound)

Month	1978	1979	1980	1981	1982	1983	1984[1]	1985[1]	1986[1]	1987[1]	1988[1]
January	58.75	71.77	119.25	85.00	72.10	71.30	62.30	59.15	65.29	60.75	123.21
February	57.20	85.05	129.80	81.27	70.85	76.50	64.22	60.57	63.86	61.73	99.73
March	58.00	90.57	101.85	81.80	67.87	73.65	67.91	60.09	66.02	63.57	103.92
April	59.80	90.35	89.95	82.92	68.47	76.32	68.46	63.62	63.80	82.37	97.50
May	60.25	85.60	90.15	79.67	68.57	78.80	63.40	62.95	62.72	66.46	99.27
June	62.10	81.45	88.35	78.10	58.15	75.30	61.04	60.15	62.57	69.89	108.97
July	61.00	81.95	97.40	78.15	63.20	76.70	58.60	60.78	58.94	76.19	98.78
August	64.57	90.05	91.70	79.62	66.47	72.80	59.35	60.19	57.59	77.63	96.21
September	64.22	98.87	93.62	76.37	62.85	69.37	57.06	59.57	60.71	80.99	111.24
October	66.87	101.00	92.45	75.15	62.20	64.52	56.34	60.97	59.19	83.04	133.48
November	66.10	97.50	91.30	73.77	64.60	64.35	59.63	60.64	58.93	103.92	147.08
December	67.60	103.85	84.05	73.65	67.30	64.02	57.54	63.18	60.17	127.49	155.81
Average	62.20	89.83	97.49	78.79	66.05	71.97	61.32	60.99	61.65	77.84	114.60

Source: Compiled by Commodity Exchange Inc.
[1] Metals Week.

Average Copper Price on the London Metal Exchange[1]—Cathode (cents per pound)

Month	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
January	56.23	73.83	114.00	88.05	72.84	68.86	61.65	61.19	63.28	59.27	115.93
February	54.33	87.33	126.71	81.25	72.20	73.09	64.09	62.79	62.96	60.46	102.30
March	56.04	92.40	100.45	81.94	68.27	71.13	67.79	62.91	65.26	62.36	103.51
April	57.48	95.29	90.96	81.90	68.60	74.58	69.36	67.11	64.93	63.85	100.00
May	58.31	85.91	90.79	78.38	68.62	77.50	64.49	67.67	63.29	66.27	100.77
June	59.98	82.57	88.26	76.53	58.32	74.87	62.10	64.31	63.20	69.85	104.95
July	60.31	80.06	95.80	75.85	63.86	74.61	60.64	64.73	58.44	76.68	96.77
August	64.12	86.18	91.09	80.90	63.41	72.14	61.14	62.40	57.52	79.51	96.18
September	64.43	92.04	90.30	77.45	62.39	68.77	58.94	60.74	59.43	81.86	105.13
October	67.22	92.61	89.70	75.29	62.47	63.58	57.87	61.57	58.27	87.63	127.65
November	65.58	92.63	89.00	74.55	62.15	61.88	61.43	60.70	57.71	109.67	143.82
December	68.22	97.00	83.21	74.70	63.74	63.06	60.30	62.13	58.68	123.40	153.94
Average	61.06	88.25	96.09	78.98	65.57	70.29	62.48	63.19	61.08	77.73	112.60

Source: Metals Week
[1] Based on average monthly rates of exchange; LME cash price (Standard Grade).

ferrous metal: A metal with iron as its major constituent. Relatively heavy, usually magnetic, and in most of its forms, quite strong. Symbol Fe; melting point, 1,535° C.

Scrap Iron and Steel: 10 Year Review (000 net tons)

Year	Receipts From Dealers & Other Sources	Receipts From Other Own Company	Scrap Shipments	Net Domestic Scrap Consumption[1]	Raw Steel Production	Foundry Shipments	Steel Castings Shipments	Apparent Steel Consumption[2]	Scrap Market Share[3]
1978	41,714	10,074	5,720	46,068	137,031	16,914	1,857	155,802	29.5%
1979	43,901	9,290	6,228	46,963	136,341	16,117	2,039	154,497	30.3%
1980	39,310	7,527	5,883	40,954	111,835	12,249	1,878	125,962	32.5%
1981	40,030	7,359	5,408	41,981	120,828	12,223	1,743	124,794	31.1%
1982	27,520	4,195	3,721	27,994	74,577	8,499	916	83,992	33.4%
1983	32,808	5,011	3,600	34,219	84,615	9,524	726	94,865	36.0%
1984	34,325	5,624	3,889	36,060	91,531	10,900	940	103,371	34.9%
1985	37,362	5,983	4,527	38,818	88,259	10,126	889	99,274	39.1%
1986	37,123	4,700	3,819	38,004	81,606	8,653	829	91,088	41.8%
1987[r]	42,101	5,736	3,029	44,808	88,472	8,924	830	98,226	45.6%
1988	47,059	5,505	2,951	49,613	99,328	8,876	1,015	109,219	45.4%

Sources: U.S. Bureau of Mines, American Iron & Steel Institute

[1] Net Domestic Scrap Consumption: Defined as receipts from dealers & other sources + other receipts − scrap shipments (excludes home scrap).

[2] Apparent Steel Consumption: Defined as raw steel production + foundry shipments + steel castings shipments.

[3] Scrap Market Share: Calculated from net domestic consumption (column 5) divided by apparent steel consumption (column 9).

Trend of U.S. Steel Production by Furnace (millions of net tons and by percentage[1])

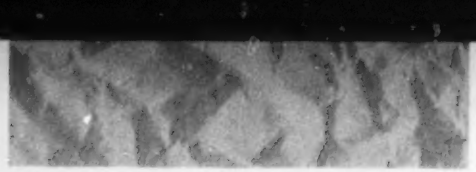
Year	Basic Oxygen Tons	Basic Oxygen Percentage	Electric Tons	Electric Percentage	Open Hearth Tons	Open Hearth Percentage
1978	83.5	60.9	32.2	23.5	21.3	15.6
1979	83.3	61.1	33.9	24.9	19.2	14.0
1980	67.6	60.4	31.2	27.9	13.1	11.7
1981	73.2	60.6	34.1	28.3	13.5	11.1
1982	45.3	60.7	23.2	31.1	6.1	8.2
1983	52.1	61.5	26.6	31.5	6.0	7.0
1984	52.8	57.1	31.4	33.9	8.3	9.0
1985	51.9	58.8	29.9	33.9	6.4	7.2
1986	47.9	58.7	30.4	37.2	3.3	4.0
1987	55.2	62.4	34.0[r]	37.6	—[2]	—[2]
1988	58.0	58.4	36.2	36.5	5.1	5.1

Source: American Iron and Steel Institute

[1] Calculated as a percentage of total steel production.

[2] Included in Basic Oxygen.

[r] = Revised



U.S. Exports of Ferrous Scrap[1] by Country
(000 net tons)

Country	1983	1984	1985	1986	1987	1988
Canada	514	736	415	342	308	552
Mexico	410	475	579	302	488	894
China	1	200	383	329	248	30
Greece	112	125	183	177	22	47
India	276	197	590	1,145	857	904
Italy	65	306	294	275	171	74
Japan	2,548	2,617	2,050	1,663	902	549
Korea, Republic of	1,467	1,824	1,969	2,972	2,642	2,230
Spain	346	578	867	645	401	330
Taiwan	468	393	399	633	401	639
Turkey	696	807	955	1,417	2,253	1,980
Venezuela	20	390	470	483	150	258
Other	446	587	458	997	1,196	1,004
Total	7,369	9,235	9,612	11,380	10,039	9,491

Source: U.S. Department of Commerce
[1] Excludes Alloy and Stainless Steel Scrap.

U.S. Exports of Ferrous Scrap by Grade
(000 net tons)

Grade	1983	1984	1985	1986	1987	1988
Alloy steel scrap	70	100	133	160	139	363
Stainless steel scrap	80	164	180	164	169	243
Total	150	264	313	324	308	606
No. 1 heavy melting scrap	1,895	2,512	2,767	2,923	2,431	2,400
No. 2 heavy melting scrap	720	879	777	797	588	691
No. 1 baled steel scrap	206	77	189	155	182	74
No. 2 baled steel scrap	220	286	290	301	366	371
Shredded steel scrap	2,029	2,775	2,559	3,495	3,328	2,910
Borings, shovelings and turnings	532	800	861	731	556	515
Other steel scrap[1]	1,445	1,316	1,070	1,174	1,342	1,252
Cut plate and structural[2]	—	—	434	714	477	427
Iron scrap	322	590	666	1,091	768	852
Total Iron and Steel Scrap	7,369	9,235	9,612	11,380	10,039	9,491

Source: U.S. Department of Commerce
[1] Includes terneplate and tinplate.
[2] Not reported separately prior to 1985.

U.S. Imports of Ferrous Scrap, Iron Ore, Pig Iron and Steel Products (millions of net tons)

Year	Scrap[1]	Iron Ore	Pig Iron	Steel
1978	0.8	37.6	0.7	22.0
1979	0.8	37.8	0.5	17.5
1980	0.6	28.1	0.5	15.5
1981	0.6	31.7	0.5	19.9
1982	0.5	16.4	0.3	16.7
1983	0.6	14.9	0.2	17.1
1984	0.6	19.2	0.7	26.2
1985	0.6	17.7	0.3	24.3
1986	0.7	18.7	0.3	20.7
1987	0.8	NA	NA	20.4
1988	1.0	NA	0.7	20.9

Source: U.S. Bureau of Mines; for steel, American Iron and Steel Institute
[1] Includes tinplate.
NA—Not available.

Purchased Scrap Receipts, Home Scrap Production and Ferrous Scrap Consumption by Grade (000 net tons)

Total-All Types of Manufacturers	Purchased Scrap Receipts[1]	1986 Home Scrap Production	Total Scrap Consumed	Purchased Scrap Receipts[1]	1987r Home Scrap Production	Total Scrap Consumed	Purchased Scrap Receipts[1]	1988 Home Scrap Production	Total Scrap Consumed
Grade of Scrap Carbon Steel:									
Low-phosphorus plate and punchings	1,869	327	2,126	1,816	337	2,192	2,239	473	2,728
Cut structural and plate	2,267	515	2,781	2,502	465	2,830	2,870	636	3,560
No. 1 heavy melting steel	7,374	6,992	14,853	9,525	6,343	15,143	9,661	7,414	16,849
No. 2 heavy melting steel	3,131	870	3,998	3,551	899	4,383	4,172	981	5,147
No. 1 and electric furnace bundles	5,586	1,533	7,313	6,042	1,164	6,994	6,037	1,179	7,189
No. 2 and all other bundles	969	8	1,041	994	74	1,081	1,057	114	1,179
Electric furnace 1 foot and under	247	32	279	264	30	289	247	30	278
Railroad rails	349	9	392	556	27	583	593	35	622
Turnings and borings	952	303	1,302	1,043	227	1,301	1,404	219	1,599
Slag scrap (Fe content 70%)	246	1,885	2,163	681	1,962	2,448	842	2,100	2,884
Shredded or fragmentized	5,303	55	5,563	6,217	121	6,365	7,660	71	7,682
No. 1 Busheling	1,810	241	2,117	2,557	150	2,639	2,656	128	2,810
All other carbon steel scrap	2,509	6,674	9,295	3,307	6,138	9,358	3,274	6,286	9,335
Stainless steel scrap	543	457	1,043	644	497	1,155	790	571	1,361
Alloy steel (except stainless)	123	1,099	1,364	283	885	1,199	344	892	1,273
Ingot mold scrap	209	1,130	1,372	403	935	1,378	455	910	1,387
Machinery and cupola cast iron	916	283	1,192	1,039	278	1,287	1,527	499	1,951
Cast iron borings	1,282	96	1,353	960	93	1,046	902	143	1,038
Motor blocks	449	818	1,264	492	922	1,413	567	1,063	1,653
Other iron scrap	1,008	2,603	3,649	987	2,644	3,746	1,280	3,183	4,489
Other scrap	862	463	1,391	944	549	1,472	1,034	516	1,607
Total scrap[2]	38,004	26,394	65,856	44,808	24,740	68,303	49,613	27,445	76,822

Source: U.S. Bureau of Mines
[1] Receipts less shipments.
[2] Data may not add to shown totals because of sampling differences; estimation procedure revised beginning 1987.

No. 1 Heavy Melting Steel Scrap Composite Price[1] (dollars per gross ton)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1978	$ 70.56	72.08	74.25	76.08	71.90	74.76	77.75	76.33	72.91	74.83	83.41	89.91	76.23
1979	97.56	110.75	119.75	99.96	97.75	100.83	96.10	90.33	88.08	87.30	92.50	94.10	97.81
1980	99.67	105.00	101.17	92.25	77.50	69.70	76.08	84.42	94.43	95.91	98.50	101.57	91.35
1981	98.58	99.50	105.23	101.75	95.42	89.37	90.17	94.63	90.42	81.17	75.63	76.42	91.53
1982	84.34	82.17	76.84	71.34	62.67	58.04	56.00	55.90	56.17	52.20	51.24	52.59	63.35
1983	61.30	70.00	73.09	71.00	67.70	70.84	71.75	75.04	77.17	77.97	81.42	89.50	73.90
1984	92.70	94.92	91.25	90.17	89.08	85.17	81.90	82.25	85.00	82.90	79.09	79.03	86.12
1985	81.00	83.15	86.75	78.70	70.50	66.34	68.97	74.17	72.43	71.17	68.83	70.23	74.35
1986	73.34	75.50	73.57	72.41	71.50	70.90	71.83	75.10	74.17	73.17	74.17	74.24	73.33
1987	76.00	77.08	74.56	73.17	75.08	77.30	79.58	84.57	94.08	108.92	107.97	99.33	85.17
1988	101.83	112.17	109.50	108.83	102.83	105.17	116.50	116.17	111.50	110.17	106.50	109.17	109.19

Source: Iron Age
[1] Average price of No. 1 heavy melting steel scrap delivered to consumers at Pittsburgh, Philadelphia and Chicago.

No. 2 Bundles Composite Price[1] (dollars per gross ton)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1978	$ 47.90	49.25	50.50	51.17	48.50	49.03	51.16	49.75	47.50	47.83	53.66	57.16	50.28
1979	61.56	68.17	73.25	63.43	65.75	67.50	62.76	58.58	57.41	56.76	58.58	61.03	62.89
1980	62.50	67.41	65.90	60.83	53.83	50.70	54.00	62.66	67.90	70.91	72.75	75.23	63.71
1981	71.83	71.83	73.83	75.08	68.08	61.57	61.58	62.50	61.66	56.50	53.43	53.75	64.31
1982	56.50	56.17	51.24	47.58	44.84	42.84	41.84	41.84	41.17	39.42	38.70	38.50	45.05
1983	42.84	48.84	51.84	48.84	46.57	46.34	45.75	45.50	46.57	46.57	49.34	58.17	48.80
1984	59.96	62.50	62.41	61.03	60.16	56.50	51.10	51.16	51.83	51.16	51.09	51.10	55.84
1985	53.00	55.25	57.50	55.24	49.51	47.17	50.04	53.83	53.04	52.25	50.67	50.63	52.34
1986	52.83	53.83	53.56	53.08	52.17	51.77	52.50	53.70	51.67	50.50	50.50	50.50	52.22
1987	51.42	51.17	50.37	49.83	51.09	52.70	54.17	54.03	60.75	71.83	69.77	65.83	56.91
1988	67.17	75.50	73.83	72.50	70.50	70.50	76.83	80.50	76.83	75.50	73.50	73.50	73.89

Source: Iron Age
[1] Average price of No. 2 bundles delivered to consumers at Pittsburgh, Philadelphia and Chicago.

Finished Steel Composite Price[1] (cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1978	16.294	17.324	17.393	17.670	17.670	17.670	17.875	18.719	18.719	18.719	18.719	18.719	17.957
1979	19.549	19.549	19.549	19.607	19.637	19.668	20.253	20.311	20.311	20.547	20.547	20.547	20.006
1980	20.943	21.038	21.168	21.739	21.739	21.739	21.736	21.736	21.736	21.982	22.019	22.286	21.655
1981	22.901	23.362	23.598	23.776	23.776	24.232	24.488	24.488	24.488	25.195	25.195	25.195	24.224
1982	25.195	25.195	25.195	25.297	25.297	25.297	25.297	25.297	25.297	25.297	25.297	25.297	25.271
1983	25.297	25.978	25.954	25.954	25.954	25.954	25.954	25.954	26.822	26.822	26.822	26.822	26.190
1984	26.822	26.939	26.939	26.939	27.405	27.405	27.582	27.582	27.582	27.582	27.582	27.582	27.313
1985	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582	27.582
1986	24.607	24.607	24.607	24.607	24.709	24.850	24.850	24.854	24.951	24.951	24.951	24.951	24.792
1987	25.236	25.236	25.236	25.236	25.236	25.236	25.236	24.804	24.804	26.002	26.002	26.002	25.356
1988	24.223	24.223	24.223	24.333	24.333	24.333	24.378	24.594	24.594	24.594	24.594	24.594	24.418

Source: Iron Age
[1] Weighted index of steel bars, shapes, wire, rails, black pipe, hot and cold rolled sheet and strips.

10

lead: Heaviest and softest of the common metals. Silvery-bluish-white, resists corrosion, highly malleable; poor conductor of electricity. Symbol Pb; melting point 327.5° C. Principally used in lead-acid storage batteries and other alloys.

Lead: 10 Year Review (short tons)

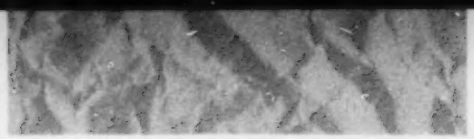
Year	Primary Production	Lead Recovered From Old Scrap	Imports	Exports (refined only)	Stocks	Stock Changes	Apparent Lead Consumption[1]	Scrap Market Share[2]
1978	626,000	716,000	250,000	9,000	158,000	+10,000	1,575,000	46%
1979	637,000	742,000	202,000	12,000	219,000	+61,000	1,507,000	49%
1980	604,000	640,000	90,000	181,000	200,000	−19,000	1,174,000	55%
1981	549,000	637,000	110,000	25,000	224,000	+24,000	1,247,000	51%
1982	570,000	574,000	105,000	62,000	188,000	−36,000	1,222,000	47%
1983	572,000	498,000	195,000	22,000	170,000	−18,000	1,262,000	40%
1984	429,000	646,000	180,000	8,000	157,000	−13,000	1,260,000	51%
1985	545,000	628,000	147,000	30,000	196,000	+39,000	1,250,000	50%
1986	408,000	634,000	157,000	14,000	115,000	−81,000	1,265,000	50%
1987[r]	412,000	767,000	205,000	11,000	121,000	+ 6,000	1,367,000	56%
1988[p]	432,000	753,000	164,000	15,000	91,000	−30,000	1,363,000	55%

Source: U.S. Bureau of Mines
[1] Apparent lead consumption: Defined as a primary production + recovered from old scrap + net trade + stock changes.
[2] Lead market share: Calculated from lead recovered from old scrap (column 3) divided by apparent lead consumption (column 8).
[r] = Revised
[p] = Preliminary

Average Monthly U.S. Producer Prices of Lead[1] (cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1978	33.00	33.00	33.00	33.00	31.00	31.00	31.00	32.17	34.06	36.61	38.00	38.00	33.65
1979	40.76	43.63	45.75	48.00	48.81	56.51	58.07	57.91	58.00	61.06	57.26	55.95	52.64
1980	49.88	49.56	49.22	44.02	36.00	34.19	35.60	40.96	42.26	45.00	43.81	38.97	42.46
1981	33.79	30.42	35.06	37.52	36.41	37.97	40.99	43.89	40.32	37.05	33.88	31.07	36.53
1982	29.67	28.70	27.64	26.06	26.09	24.76	27.18	25.82	25.32	23.19	21.61	20.47	25.54
1983	22.03	21.12	20.71	21.17	20.22	19.41	19.32	19.46	21.69	25.38	25.15	24.46	21.68
1984	25.12	24.07	25.03	26.43	25.37	28.16	30.51	28.24	24.18	22.33	25.25	21.89	25.55
1985	19.09	18.82	17.68	19.92	20.11	19.05	18.88	19.10	19.20	18.93	19.05	18.97	19.07
1986	18.35	17.79	18.20	18.73	19.38	22.07	21.94	22.78	23.44	25.55	28.01	28.68	22.08
1987	27.87	26.04	26.00	27.84	34.95	36.93	41.67	41.95	42.00	42.00	42.00	42.00	35.94
1988	38.00	34.85	34.00	34.00	34.57	36.30	36.50	36.52	38.41	39.15	41.36	42.02	37.14

Source: Metals Week
[1] Quotations for the U.S. on a nationwide, delivered basis.



Average London Metal Exchange Monthly and Yearly Quoted Prices of Lead (cents per pound)

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
1978	30.03	26.42	26.35	25.96	24.65	25.84	26.39	28.96	31.41	37.63	36.47	38.93	29.86
1979	44.97	47.79	53.32	52.60	56.16	62.63	57.64	54.96	55.77	59.77	55.49	53.33	54.52
1980	50.66	52.93	50.72	43.88	35.49	33.44	36.74	38.65	40.01	39.50	36.89	33.68	41.21
1981	31.95	31.24	33.06	34.38	31.58	32.30	35.55	37.34	34.61	32.47	30.18	30.56	33.30
1982	29.37	28.01	27.75	26.05	26.05	23.59	25.03	23.70	23.35	22.54	20.96	20.30	24.66
1983	21.54	20.61	20.09	20.74	19.63	18.49	18.27	18.04	18.34	19.00	18.34	18.23	19.27
1984	18.01	18.33	20.82	21.83	20.54	21.95	22.37	21.18	18.20	18.67	19.96	18.83	20.12
1985	19.03	16.69	15.95	17.65	17.04	17.64	18.27	18.74	18.15	17.83	17.86	17.67	17.84
1986	16.69	16.64	16.64	16.74	17.06	18.96	17.21	17.77	18.45	19.69	21.45	23.48	18.43
1987	21.02	20.86	22.07	25.17	31.40	28.51	30.06	29.88	29.31	27.25	29.10	29.86	27.04
1988	30.21	29.71	29.39	29.41	30.27	30.68	28.06	27.25	27.63	29.63	31.33	33.12	29.73

Source: Metals Week

U.S. Lead Scrap Exports by Country (short tons)

Country	1983	1984	1985	1986	1987	1988
Belgium-Luxembourg	383	380	422	32	726	118
Brazil	5,340	6,461	15,956	17,788	8,035	17,760
Canada	17,315	6,743	4,006	2,910	10,310	13,757
Colombia	3,196	6,227	6,818	3,306	497	—
Denmark	259	474	—	1	—	—
Germany, Federal Republic of	1,672	997	1,681	848	1,619	3,073
India	37	328	496	1,569	684	2,665
Italy	414	—	3,889	22	45	31
Japan	292	370	1,698	689	90	132
Korea, Republic of	4,715	1,709	3,365	6,140	4,968	3,525
Mexico	977	3,167	2,019	2,788	6,247	12,249
Netherlands	542	289	201	535	138	432
South Africa, Republic of	—	—	—	—	224	2,968
Taiwan	15,645	14,914	19,028	23,907	9,869	11,063
Trinidad & Tobago	1,152	3,903	75	—	—	—
United Kingdom	865	726	1,800	3,335	6,365	7,194
Venezuela	—	1,093	4,120	3,364	5,164	7,685
Other	3,323	1,929	508	1,107	2,804	7,413
Total[1]	56,127	49,710	66,082	68,340	57,785	90,064

Source: Department of Commerce
[1] Data may not add to totals shown because of independent rounding.

Ni

nickel: Hard, malleable, ductile, silvery-white metallic element. Symbol Ni; melting point, 1,453° C. Used in stainless steel and in other corrosion-resistant alloys; in coinage, electroplating and as a catalyst.

Nickel/Stainless Steel: 10 Year Review (net tons)

Year	Receipts From Brokers, Dealers & Other Sources	Receipts From Other Own Companies	Domestic Shipments of Scrap	Apparent Scrap Consumption[1]	Stainless Steel Shipments	Scrap Market Share[2]
1978	395,000	40,000	61,000	374,000	1,191,000	31%
1979	425,000	50,000	69,000	406,000	1,361,000	30%
1980	383,000	38,000	58,000	363,000	1,127,000	32%
1981	428,000	40,000	37,000	431,000	1,163,000	37%
1982	402,000	35,000	31,000	406,000	894,000	45%
1983	492,000	19,000	31,000	480,000	1,137,000	42%
1984	528,000	49,000	28,000	549,000	1,248,000	44%
1985	558,000	23,000	24,000	557,000	1,251,000	45%
1986	552,000	22,000	31,000	543,000	1,187,000	46%
1987	642,000	24,000	22,000	644,000	1,418,000	45%
1988	788,000	21,000	19,000	790,000	1,586,000	50%

Source: U.S. Bureau of Mines, AISI.

[1] Apparent Scrap Consumption: Defined as receipts from brokers, dealers and other sources + receipts from other own companies − scrap shipments (excludes home scrap).

[2] Scrap Market Share: Calculated from apparent scrap consumption (column 5) divided by stainless steel shipments (column 6).

Average Nickel Price—New York Dealer/Cathode (cents per pound)

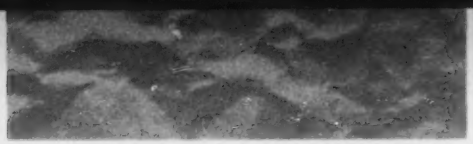
Month	1986	1987	1988
January	1.89	1.70	3.79
February	1.88	1.73	3.89
March	1.91	1.77	6.16
April	1.89	1.82	7.86
May	1.94	2.10	7.72
June	1.95	2.17	7.00
July	1.88	2.26	6.64
August	1.85	2.47	6.55
September	1.80	2.48	5.21
October	1.76	2.63	5.13
November	1.75	2.73	5.72
December	1.74	3.47	7.42
Average	1.85	2.28	6.09

Source: Metals Week

Average Nickel Price on the London Metal Exchange (cents per pound)

Month	1986	1987	1988
January	1.83	1.60	3.66
February	1.81	1.69	3.93
March	1.87	1.71	7.03
April	1.81	1.77	8.17
May	1.83	2.01	7.72
June	1.85	2.01	7.07
July	1.77	2.16	6.62
August	1.73	—	6.43
September	1.69	—	5.39
October	1.65	2.58	5.24
November	1.65	—	6.05
December	1.62	3.47	7.68
Average	1.76	2.19	6.25

Source: Metals Week



U.S. Exports of Stainless Steel by Country
(net tons)

Country	1983	1984	1985	1986	1987	1988
Canada	6,819	14,145	7,509	6,614	12,853	27,447
Belgium	6,082	25,054	17,397	20,794	11,850	7,189
Brazil	—	—	18	694	3,452	151
Germany, Federal Republic of	1,112	16,592	23,799	2,990	2,794	14,853
India	1,589	2,666	5,017	6,701	1,916	1,626
Italy	—	—	7,638	350	4,067	6,872
Japan	47,809	51,686	46,897	52,860	57,771	72,812
Korea	1,510	2,486	7,759	10,457	1,322	10,957
Netherlands	714	14,204	25,353	26,573	16,995	9,000
Spain	9,783	29,884	27,222	15,407	39,840	67,396
Sweden	1,180	3,290	3,791	13,668	5,438	10,882
Taiwan	1,124	833	472	2,287	4,257	5,997
Other	2,577	2,702	6,711	4,725	6,046	8,162
Total	80,299	163,542	179,583	164,120	168,601	243,344

Source: Department of Commerce

zinc: A lustrous, bluish-white metallic element. Symbol Zn; melting point, 419.47° C. Used in many alloys including brass, bronze, nickel silver, and other metals to protect them against corrosion.

Zinc: 10 Year Review (short tons)

Year	Domestic Old & New Scrap Consumption	Reported/ Apparent Zinc Consumption[1]	Scrap Market Share[2]
1978	199,712	1,158,060	17%
1979	224,546	1,102,968	20%
1980	201,764	894,126	23%
1981	223,858	926,897	24%
1982	188,272	782,072	24%
1983	226,044	888,334	25%
1984	264,203	935,746	28%
1985	240,803	1,036,823[3]	23%
1986	227,132	1,100,799	21%
1987r	249,081	1,159,620	21%
*1988p	173,843	1,224,655	14%

Source: U.S. Bureau of Mines.

[1] Reported/Apparent Zinc Consumption: Defined as primary production + old & new scrap consumed + net trade + stock change.

[2] Scrap Market Share: Calculated from old & new scrap consumed (column 2) divided by reported/ apparent zinc consumption (column 3).

[3] After 1985 Apparent Consumption.

r = Revised.

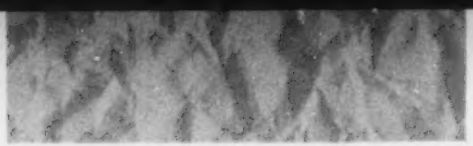
p Preliminary.

*excludes copper-base, aluminum-base, magnesium-base scrap.

Zinc Scrap Exports by Country (short tons)

Country	1983	1984	1985	1986	1987	1988
Belgium	7,334	5,388	6,122	7,694	4,396	2,559
Canada	506	938	798	827	2,542	1,503
Dominican, Republic of	—	—	—	—	25	—
Finland	—	—	4,652	—	—	—
France	198	860	25	471	—	—
Germany, Federal Republic of	4,703	3,880	1,711	1,404	485	289
India	299	1,615	1,997	2,646	2,055	1,137
Japan	3,212	3,951	4,535	404	627	542
Korea, Republic of	226	1,143	2,094	3,172	1,164	4,363
Mexico	—	—	164	81	—	36
Netherlands	19	21	414	272	19	157
Spain	38	132	104	141	—	—
Taiwan	6,375	13,118	19,152	52,222	78,143	91,990
United Kingdom	62	422	452	278	352	463
Venezuela	—	19	—	—	20	—
Other	113	404	324	47	987	1,786
Total	23,085	31,890	42,544	69,659	90,815	104,825

Source: Department of Commerce



Average Monthly U.S. Zinc Price (cents per pound)

Month	1978	1979	1980	1981	1982[1]	1983[1]	1984[1]	1985[1]	1986[1]	1987[1]	1988[1]
January	30.50	34.57	37.44	41.19	42.17	38.61	49.22	42.94	32.87	41.40	44.44
February	30.06	35.62	37.50	41.25	42.72	38.62	50.61	42.65	30.88	38.38	45.44
March	29.00	37.24	38.00	41.30	39.23	37.90	51.07	43.20	31.22	37.70	47.90
April	29.00	38.99	38.01	42.56	35.51	38.00	51.90	44.80	32.13	38.19	51.50
May	29.00	39.39	37.50	45.20	34.67	38.11	52.77	45.12	32.97	42.23	56.04
June	29.01	39.39	36.44	46.12	34.60	39.46	52.45	43.73	36.54	45.05	62.55
July	29.80	39.40	35.50	46.25	35.66	40.01	49.52	41.44	39.55	45.67	65.64
August	31.16	36.90	35.73	47.47	37.79	40.56	47.85	39.84	40.83	44.43	66.46
September	32.37	35.80	36.63[1]	48.72	39.64	42.98	46.42	37.86	43.70	42.59	68.26
October	32.83	36.21	37.27[1]	45.87	40.83	46.11	44.19	35.76	45.98	41.75	69.45
November	34.43	36.82	38.58[1]	46.15	40.39	47.55	43.60	33.36	45.78	42.38	71.25
December	34.50	37.23	40.55[1]	42.59	38.46	48.74	43.62	33.61	43.51	43.31	73.44
Average	30.97	37.30	37.43	44.56	38.47	41.39	48.60	40.37	34.43	41.92	60.20

Source: Metals Week
[1] Based on High Grade Zinc

Zinc London Metal Exchange Cash Price (cents per pound)

Month	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
January	23.47	32.64	35.03	35.22	37.10	31.68	43.41	39.20	29.18	34.43	39.81
February	21.62	35.92	39.39	33.11	37.30	30.88	45.26	40.14	27.58	33.56	39.72
March	23.01	36.00	33.64	34.33	35.78	30.75	47.16	41.70	28.35	33.16	44.50
April	25.12	35.74	32.04	37.31	33.65	31.61	45.52	42.14	29.10	34.53	48.46
May	25.43	35.28	31.31	38.56	34.01	33.34	45.38	39.87	32.06	38.01	53.33
June	26.17	34.13	30.71	38.06	31.33	32.56	42.67	36.56	36.45	39.80	61.87
July	26.45	32.69	32.32	39.21	32.80	33.54	38.70	34.70	36.58	37.59	56.08
August	28.01	30.12	34.83	43.28	32.43	36.67	37.81	33.29	37.01	36.44	59.35
September	28.73	32.79	36.07	42.57	33.97	37.98	38.31	31.24	39.48	34.28	60.30
October	32.31	32.00	36.49	40.41	34.06	38.93	38.09	28.62	40.17	34.89	68.85
November	31.15	31.76	36.33	38.74	32.18	38.97	38.67	27.06	37.17	38.42	70.63
December	31.14	33.98	35.50	38.31	30.30	38.85	38.87	31.05	36.18	39.25	72.24
Average	26.88	33.59	34.47	38.34	33.74	34.73	40.76	36.23	34.18	36.25	51.11

Source: Metals Week

gold: A heavy, soft, yellow, ductile, malleable metallic element. Symbol Au; melting point, 1,063° C. Commonly alloyed with varying percentages of copper, silver, nickel and palladium.

U.S. Refinery Production of Gold: 10 year Review (000 troy ounces)

Raw Material Concentrates and Ore:	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987r	1988
Domestic	962	795	773	801	718	885	760	620	2,431	3,613	4,409
Foreign	71	83	14	4	[1]	7	4	—	[1]	[1]	[1]
Old Scrap[2]	1,384	1,675	2,184	1,610	1,444	1,380	1,310	1,215	1,552	2,034	1,668
New Scrap	1,701	1,206	1,640	1,475	1,596	1,590	1,794	1,520	1,576	1,273	2,410
Total	4,118	3,761	4,612	3,890	3,760	3,863	3,868	3,356	5,529	6,920	8,487

Source: U.S. Bureau of Mines
[1] Foreign figures included with Domestic.
[2] Excludes upgrading of U.S. Government-owned gold by the U.S. Assay Office. Refining activity terminated in September 1988.
r = Revised

Average Gold Price—Comex 1st Position (dollar per troy ounce)

Month	1985	1986	1987	1988
January	302.54	345.71	409.11	476.14
February	298.53	338.67	401.55	441.42
March	305.50	345.86	409.23	444.42
April	324.36	341.30	439.63	452.79
May	315.88	342.51	460.99	452.12
June	316.49	342.96	449.59	451.16
July	317.90	349.69	451.45	437.75
August	330.61	376.94	459.89	431.50
September	322.48	419.39	459.60	411.75
October	326.09	423.55	465.51	407.14
November	325.25	397.51	468.32	420.79
December	322.68	391.85	486.03	418.98
Average	317.36	367.99	446.74	437.16

Source: Metals Week

Gold Price on the London Metal Exchange (Final) (dollar per troy ounce)

Month	1985	1986	1987	1988
January	302.70	345.38	408.26	476.58
February	299.10	338.89	401.11	442.07
March	303.94	345.70	408.91	443.61
April	325.27	340.44	438.35	451.55
May	316.37	342.38	460.23	451.07
June	316.49	342.72	449.59	451.33
July	317.22	348.34	450.52	437.63
August	329.79	376.59	461.14	431.28
September	323.35	417.73	460.35	413.46
October	325.84	423.51	465.35	406.78
November	325.29	397.55	467.57	420.17
December	321.72	390.92	486.24	419.05
Average	317.26	367.51	446.47	437.05

Source: Metals Week

silver: A white metallic element. Ductile, very malleable, and capable of a high degree of polish. Symbol Ag; melting point, 960.8° C. Used for coin, jewelry, etc.

U.S. Refinery Production of Silver: 10 year Review (000 troy ounces)

Raw Material	1979	1980	1981	1982	1983	1984	1985	1986	1987[r]	1988
Concentrates and Ores:										
Domestic	38,982	36,171	44,487	43,825	50,281	49,892	53,808	42,413	44,838	45,330
Foreign	11,779	3,182	2,520	344	169	126	—	—	—	—
Total	50,761	39,353	47,007	44,170	50,450	50,019	53,808	42,413	44,838	45,330
Old Scrap	39,729	53,131	39,067	27,171	25,549	24,070	27,830	23,159	26,034	26,865
New Scrap	36,714	65,642	44,738	37,812	41,839	45,503	44,643	43,390	42,319	48,250
Grand Total	127,204	158,127[1]	130,812[1]	109,153[1]	117,838[1]	119,592[1]	126,281[1]	108,962[1]	113,191[1]	120,445

Source: U.S. Bureau of Mines

[1] Data may not add up to totals shown due to independent rounding.

[r] = Revised

Average Silver Price—Comex 1st Position (cents per troy ounce)

Month	1985	1986	1987	1988
January	610.77	606.68	553.72	672.98
February	606.90	585.55	548.46	633.16
March	603.36	563.54	569.90	643.40
April	645.82	522.36	736.43	645.65
May	626.79	510.93	843.53	654.55
June	617.60	514.97	742.57	703.12
July	610.57	505.06	772.04	711.65
August	625.67	521.18	780.55	669.83
September	604.57	569.37	760.68	634.92
October	619.50	567.13	756.01	628.73
November	612.70	556.80	670.83	627.88
December	588.22	536.66	679.17	612.54
Average	614.37	546.69	701.16	653.20

Source: Metals Week

Average Silver Price—London Metal Exchange Cash (cents per 10,000 ounce contracts)

Month	1985	1986	1987	1988
January	607.62	602.73	552.01	670.53
February	606.76	585.45	548.23	631.13
March	598.15	562.98	565.23	637.99
April	642.41	519.82	742.99	642.28
May	611.79	506.10	845.12	651.35
June	616.56	513.12	741.72	698.40
July	609.11	501.01	762.72	707.60
August	624.18	519.72	785.85	668.15
September	606.27	563.24	758.89	633.55
October	616.91	561.67	763.29	625.54
November	609.73	556.57	669.12	626.64
December	585.41	537.00	679.76	609.80
Average	618.33	545.06	701.24	650.24

Source: Metals Week

pgms: Silvery-white, metallic elements include platinum (Pt), palladium (Pd), ruthenium (Ru), rhodium (Rh), osmium (Os), and iridium (Ir). Characterized by high specific gravity, unusual resistance to oxidizing and acidic attack; high melting points.

Platinum-Group Metals (PGMs) Nontoll Refined in the U.S.: 10 Year Review (troy ounces)

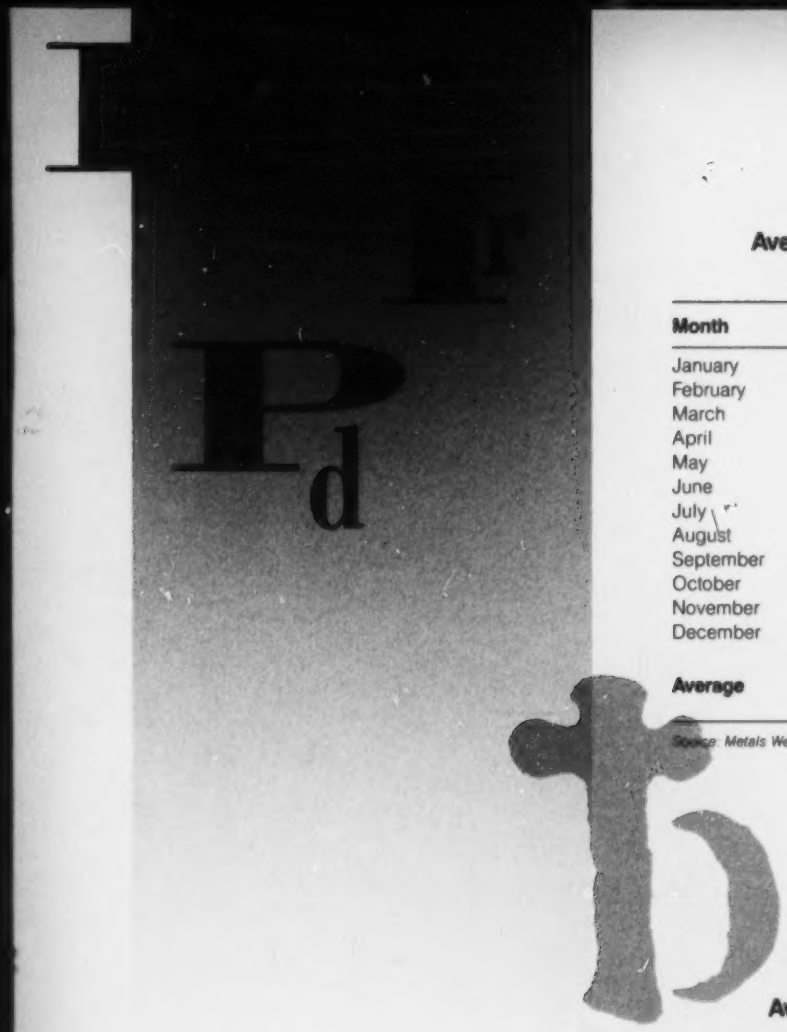
Year	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
1978	75,585	166,371	1,565	3	8,266	5,401	257,191
1979	75,038	220,639	1,647	—	7,964	3,734	309,022
1980	154,075	162,408	3,186	13	10,106	1,135	330,923
1981	187,883	185,764	3,318	64	11,317	3,291	391,637
1982	190,249	139,286	2,896	—	11,302	427	344,160
1983	118,579	177,816	2,357	—	3,663	750	303,165
1984	89,702	243,347	735	27	3,668	2,047	339,526
1985[1]	52,906	204,879	252	—	3,126	1,474	262,637
1986[1]	58,117	172,660	297	—	2,999	1,313	235,386
1987[1r]	38,971	125,446	115	604	3,944	1,567	170,647
1988[1]	37,874	121,948	193	—	3,344	64	163,454

Source: U.S. Bureau of Mines
[1] Typically, about 99.8% of the platinum and 99% of the palladium are secondary metal; the other metals are entirely secondary.
r = Revised

Platinum-Group Metals (PGMs) Toll Refined in the U.S.: 10 Year Review (troy ounces)

Year	Platinum	Palladium	Iridium	Osmium	Rhodium	Ruthenium	Total
1978	630,961	344,022	6,599	667	35,914	3,797	1,021,960
1979	585,932	446,189	5,487	—	38,875	13,719	1,090,202
1980	533,101	498,905	4,933	1,371	33,362	7,340	1,079,012
1981	520,717	607,397	7,826	1,865	34,870	18,471	1,191,146
1982	393,832	430,564	10,108	885	26,693	6,301	868,383
1983	433,700	456,732	5,820	925	41,624	55,788	994,589
1984	524,158	568,489	7,826	49	37,584	19,288	1,157,394
1985[1]	491,671	490,647	7,007	3	36,335	13,356	1,039,020
1986[1]	493,748	376,091	3,584	1,415	38,041	19,646	932,525
1987[1r]	725,961	616,311	3,269	796	60,930	37,430	1,444,697
1988[1]	735,737	672,689	8,102	610	58,707	16,043	1,491,889

Source: U.S. Bureau of Mines
[1] Typically, about 99.8% of the platinum and 99% of the palladium are secondary metal; the other metals are entirely secondary.
r = Revised



Average Palladium Price—New York Dealer (dollar per troy ounce)

Month	1985	1986	1987	1988
January	121.29	102.43	122.75	123.66
February	124.44	100.95	119.50	118.90
March	112.98	110.10	122.50	121.44
April	112.05	106.77	135.93	121.50
May	108.00	107.74	144.70	122.10
June	98.38	110.19	136.71	127.46
July	94.48	111.23	139.50	124.50
August	102.89	128.31	140.00	122.98
September	98.80	140.14	135.71	119.62
October	100.75	134.84	129.24	120.68
November	100.47	121.94	111.21	125.48
December	94.55	116.89	120.59	131.14
Average	105.76	115.96	129.95	123.28

Source: Metals Week

Average Platinum Price—New York Dealer (dollar per troy ounce)

Month	1985	1986	1987	1988
January	273.90	364.95	515.00	491.58
February	269.22	373.16	514.63	451.85
March	259.83	413.33	525.23	491.17
April	282.27	417.45	584.50	523.33
May	271.89	411.48	605.00	544.52
June	264.37	432.38	565.27	576.36
July	267.82	439.23	568.30	543.75
August	307.64	536.81	608.34	529.13
September	309.10	595.24	586.33	506.24
October	323.39	570.68	564.48	522.10
November	334.05	510.39	494.21	566.50
December	334.19	474.00	499.50	567.38
Average	291.47	461.59	552.57	525.33

Source: Metals Week

paper stock: Waste papers, sorted or segregated into various recognized grades. Used as a principal ingredient in the manufacture of certain types of paper and paperboard.

Paper and Paper Stock: 10 Year Review (000 short tons)

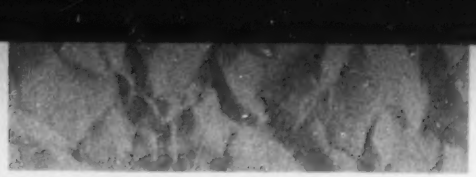
Year	Paper and Paperboard Production	Reported Paper Stock Consumption	Paper Stock Market Share[1]
1978	62,047	15,272	25%
1979	64,345	15,820	25%
1980	63,600	15,394	24%
1981	64,259	15,518	24%
1982	60,958	14,920	25%
1983	66,761	16,122	24%
1984	70,268	17,183	25%
1985	68,833	16,850	25%
1986	72,689	18,428	25%
1987[r]	74,433	19,201	26%
1988	76,749	20,069	26%

Source: American Paper Institute.
[1] Paper Stock Market Share: Calculated from reported paper stock consumption (column 3) divided by paper and paperboard production (column 2).
[r] = Revised

Paper Stock Consumption (000 short tons)

Year	Mixed Grades	Newspapers[1]	Corrugated	Pulp Subs.	High Grade Deinking	Total All Grades[1]
1978	2,729.0	2,512.0	6,721.0	2,242.0	1,068.0	15,272.0
1979	2,648.0	2,780.0	6,967.0	2,308.0	1,117.0	15,820.0
1980	2,268.0	2,864.0	6,866.0	2,254.0	1,142.0	15,394.0
1981	2,233.0	2,852.0	6,910.0	2,307.0	1,216.0	15,518.0
1982	1,707.0	2,973.0	6,770.0	2,247.0	1,223.0	14,920.0
1983	1,908.0	2,992.0	7,443.0	2,456.0	1,323.0	16,122.0
1984	1,974.5	3,194.8	7,971.7	2,673.4	1,368.6	17,183.0
1985	1,901.5	3,175.0	7,899.5	2,493.7	1,380.4	16,850.1
1986	2,044.5	3,417.8	8,633.6	2,761.5	1,570.3	18,427.7
1987[r]	2,116.2	3,442.5	9,176.7	2,902.8	1,562.9	19,201.1
1988	2,180.2	3,526.7	9,747.5	2,999.8	1,615.2	20,069.4

Source: American Paper Institute
[1] Includes estimate for non-paper/paperboard uses.
[r] = Revised



U.S. Exports of Paper Stock by Grade (short tons)

Year	Newspapers	Old Paperboard	Corrugated Paper and Substitutes	High Grade Pulp Paper, n.e.c.[1]	Mixed Total
1979	336,138	960,369	288,909	647,830	2,233,246
1980	424,864	1,208,690	381,323	649,395	2,664,272
1981	425,060	991,115	322,511	473,863	2,212,549
1982	439,131	886,655	304,139	497,125	2,127,050
1983	461,218	993,436	414,279	704,783	2,573,716
1984	539,431	1,260,845	549,687	885,478	3,235,441
1985	625,631	1,310,876	469,594	879,825	3,285,926
1986	766,087	1,529,722	759,205	693,697	3,748,711
1987r	870,240	1,921,679	892,313	738,104	4,422,336
1988	1,008,664	2,277,166	1,469,453	884,835	5,640,118

Source: American Paper Institute
[1] n.e.c. not elsewhere classified

Seven Largest Consuming Countries of U.S. Paper Stock Exports (000 short tons)

Country	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Canada	478	451	357	271	347	326	209	226	287	332
Italy	170	199	114	82	56	—	166	154	140	269
Japan	140	201	84	106	266	309	301	399	660	608
Korea	503	408	518	512	557	773	676	839	939	1,226
Mexico	381	588	346	236	427	455	457	580	781	1,133
Spain	—	—	—	—	—	95	140	134	130	170
Taiwan	229	370	386	462	545	726	758	892	895	991
Venezuela	118	116	129	129	100	113	—	—	—	67
Other	214	330	279	329	276	439	578	524	591	845
Total[1]	2,233	2,664	2,213	2,127	2,574	3,235	3,286	3,749	4,422	5,640

Source: American Paper Institute.
[1] Data may not add to totals shown due to independent rounding.

Exports by Country: 1987
(000 pounds)

Country	Used Apparel	Rags and Scrap Cotton	Rags and Scrap Wool	Rags and Scrap MMF[1]	Others
Bangladesh	14,581	—	—	33	492
Benin	10,972	226	34	19	243
Canada	1,330	2,003	28	1,509	4,414
Chile	4,783	275	21	23	1,029
India	3,833	42	186	989	4,126
Italy	2,409	80	1,498	401	29,496
Netherlands	2,565	288	—	168	2,509
Pakistan	23,088	95	183	124	1,324
Singapore	3,373	—	—	—	248
Spain	1,911	161	314	494	51,949
Tanzania	7,871	213	—	760	606
Tunisia	2,433	—	—	—	15,174
Zaire	11,379	—	—	284	877
All Other	73,245	2,578	1,074	13,133	24,698
Total	163,783	5,961	3,338	17,937	137,185

Source: Bureau of the Census
[1]MMF = Man Made Fibers

Textile Exports by Country: 1988
(000 pounds)

Country	Used Apparel	Rags and Scrap Cotton	Rags and Scrap Wool	Rags and Scrap MMF[1]	Others
Bangladesh	3,088	—	—	—	—
Benin	10,239	—	—	39	454
Canada	2,275	2,313	253	1,272	4,685
Chile	5,799	317	—	—	669
India	6,085	—	779	644	9,903
Italy	2,133	14	1,307	151	23,675
Netherlands	2,120	145	—	75	1,417
Pakistan	28,005	—	—	90	1,916
Singapore	3,049	122	—	—	950
Spain	1,669	158	8	822	43,348
Tanzania	4,374	—	50	—	—
Tunisia	10,824	—	—	2,099	10,488
Zaire	8,048	—	—	881	881
All Other	76,895	3,069	2,398	6,073	98,386
Total	135,830	5,686	2,955	27,138	128,924

Source: Bureau of the Census
[1]MMF = Man Made Fibers

ustries, Inc.
the merger
l, Inc., and
Industries,
ong to the
consumers
nonferrous
d suppliers
stry.

FACTS
1988 YEARBOOK
Copyright © 1989

Institute of Scrap Recycling Industries, Inc.
1627 K Street, NW
Suite 700
Washington, DC 20006